45447

S/892/62/000/001/009/022
B102/B186

26.2246

AUTHORS: Larichev, A. V., Levchenko, V. P., Osanov, D. P.

TITLE: The effect of channels in the shield on the attenuation of the gamma radiation of extended sources

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Voprosy dozimetrii i zashchity ot izlucheniy, no. 1, 1962, 66-73

TEXT: The effect of conical or cylindrical shield channels is calculated for γ-ray sources in the shape of a truncated cone or of a line. In the case of the truncated cone covered with a shield containing the conical channel, the dose rate at point A is calculated by

$$P(\alpha, \mu l) = \frac{2\pi k q}{\mu_0 H}\left(1 - \cos\alpha - \Phi(\mu_0 H) + \cos\alpha\,(\Phi(\mu l \sec\alpha) - \right.$$
$$- \Phi[(\mu l + \mu_0 H)\sec\alpha] + \Phi(\mu_0 H \sec\alpha)) +$$
$$\left. + \cos\varphi\,(\Phi[(\mu l + \mu_0 H)\sec\varphi] - \Phi(\mu l \sec\varphi))\right), \qquad (1)$$

$\mu_0 H = 1, 3 \div 5;$
$\mu l = 0{,}5, 1, 2, 3 \div 5;$
$\varphi = 30°, 45°, 60° \div 90°;$
$\alpha = 5°, 10°, 20° \div 30°.$

Card 1/3

k is the gamma constant of the isotope, q the specific source activity and $\bar{\Phi}(x)$ King's function. The μt-dependence of the reduced dose rate ε obtained for $\mu_0 H=1$ is shown in Fig.1; $P(\alpha=0,\mu t)$ denotes the dose rate at A without shield channel. $\varepsilon(\alpha)$ is also calculated. For a linear source and a cylindrical channel the reduced dose rates

$$\varepsilon = \frac{P}{P_0} = \frac{\int_0^{\infty} e^{-\mu t'(\alpha)}\,d\mu}{\int_0^{\infty} e^{-\mu t(\alpha)}\,d\mu}; \quad (2) \qquad \varepsilon' = \frac{P'}{P_0'} = \frac{\int_0^{\infty} B(t')e^{-\mu t'(\alpha)}\,d\mu}{\int_0^{\infty} B(t)e^{-\mu t(\alpha)}\,d\mu}, \quad (3)$$

are calculated, where P and P' are the dose rates at any point behind the shield, without and with γ-ray scattering taken into account; P_0, P_0' denote these dose rates if no channel exists; $t(\alpha)$ and $t'(\alpha)$ are the γ-ray path lengths without and with channel $t(\alpha)=t_0 \sec\alpha$, t_0 is the shield thickness; μ is the linear γ-ray attenuation factor; $B(t)$, $B(t')$ are the dose build-up factors. Numerical calculations were made for $\mu t_0 = 1,3,5$, $\mu R = 0.2$, 0.5, 0.7, 1.0, and 3.0 and $\theta = 30$, 60 and 90^0; θ is the angle

The effect of channels in the ...

between channel axis and shield plane. For lead, steel and water and Co^{60} γ-rays (1.25 Mev) the theoretical results were partly compared with experimental data. For $\theta=90^{\circ}$ agreement was close, for 60° a divergence was observed due to γ-ray reflections from the channel walls. There are 8 figures.

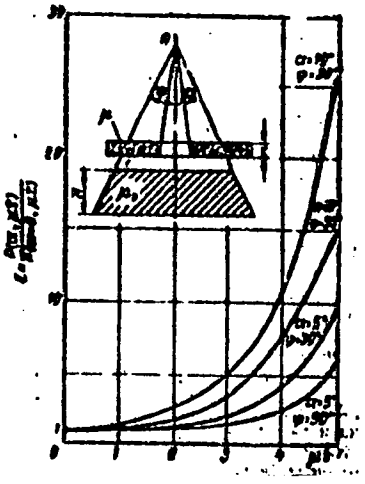


Fig. 1

Card 3/3

S/796/62/000/003/005/019

AUTHOR: Osanov, D.P.

TITLE: Dependence of the accumulation (storage) factors on the location of a shielding barrier between source and detector.

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Pribory i metody analiza izlucheniy. no.3. 1962, 53-60.

TEXT: The location of a shielding barrier between source and detector affects the magnitude of the accumulation dose factor. The paper reports the results of an analytical investigation of this placement effect under the following premises: (1) The γ-source is punctuate and has a single energy; (2) the barrier area is infinite; (3) single scattering of the γ-rays occurs in the shield; (4) source, shield, and detector operate in a vacuum. The geometry of the experiment and all definitions are illustrated schematically. A differential expression is provided for the intensity of the dose behind a shield as a function of the power of a punctuate and collimated radiation pencil directed at the shield at a prescribed angle and which undergoes a single scattering within the shield through a certain deflection angle. The expression includes the various distances involved in the configuration geometry; the attenuation coefficient for the initial and the scattered energy; the number of

Card 1/3

electrons per cm^3; the Klein-Nishina function which expresses the intensity of radiation scattered in a given direction for a unit solid angle, unit initial intensity, and one electron; the true absorption coefficient of the air for the scattered-radiation energy; and the energy equivalent of one roentgen. Calculation formulas are developed. For a given shield thickness $\mu_o d=2$, the dose intensity is plotted versus the collimation angle for 3 cases: Shield placed adjacent to the detector, shield placed adjacent to the source, shield placed midway between source and detector. At zero angle the 3 curves coincide. With growing angle the first curve (shield near detector) diminishes steeply, since only the quanta contained in the angular range of $0-3^o$ contribute substantially; hence, there is no need for maintaining constant thickness throughout the shield, and a variable thickness can be calculated from the curve to obtain a given desired shielding effectiveness with a minimal use of material. In the second instance (shield near source) the curve drops from $0-1^o$, then rises to near 25^o, then drops again. Interpretation: At small angles the non-scattered quanta miss the detector, but the number of scattered quanta remains small, since the path length along which scattering in the shield is possible is viewed under a very small angle. This angle grows in the $5-25^o$ angular range, and with it grows the probability of scattered-quanta impingement. At yet greater angles, radiational absorption prior to and following scattering takes its toll. These and other analogous curves are used to calculate the spectral and angular

distributions of a singly-scattered radiation beyond a shield, and to calculate the accumulation factor of the shield. One example of a moving shielding medium consists in the translation of the atmospheric compression shock wave following an atomic explosion, a phenomenon explored by Leypunskiy, O.I., in his "Gamma izlucheniye atomnogo vzryva - The gamma radiation of an atomic explosion." Moscow. Atomizdat, 1959. A necessary extension of the present punctuate-source analysis to the case of an extended source is desirable, but fraught with difficulties. There are 3 figures, 1 (unnumbered) table, and 5 references (the one cited Russian-language Soviet book and 4 English-language U.S. papers).

ASSOCIATION: None given.

S/089/62/012/006/013/019
B102/B104

26.2240

AUTHORS: Osanov, D. P., Kovalev, Ye. Ye.

TITLE: Absorption dose factor for a cylindrical source in the presence of a shield

PERIODICAL: Atomnaya energiya, v. 12, no. 6, 1962, 528

TEXT: The results of previous work (Atomnaya energiya, 10, no. 5, 515, 1961)* are extended to a cylindrical source located behind a plane shield with a thickness of $\mu_1 d$. Using the denotations from the previous work, the absorption dose factor is obtained as $S = 1 + \frac{1 + 0.75\,\mu R}{2}(1.5 + 1/p)f(\mu_1 d)\epsilon$. The function $f(\mu_1 d)$ is tabulated for $\mu R = 1, 3, 5, 7, 10$, $p = 1.5, 2, 3, 5, 10$, and $\mu_1 d = 0, 1, 3, 5, 7, 10$. It is virtually independent of the relative height of the cylinder. The relation obtained for S is valid for single scattering of radiation. Multiple scattering can be taken into account by using the method of equivalent absorption length. The factor $B(\mu_1 l)/B(\mu_1 t)$ has to be introduced,

Card 1/2 * Not ABSTRACTED

S/089/62/012/006/013/019
B102/B104

Absorption dose factor for ...

where B is the dose accumulation factor, and $\mu_1 l$ and $\mu_1 t$ are the equivalent absorption lengths for a hollow and a solid cylinder, respectively. There is 1 table.

SUBMITTED: November 25, 1961

Card 2/2

38992
S/089/62/013/001/008/012
B102/B104

21.5250

AUTHORS: Kovalev, Ye. Ye., Osanov, D. P.

TITLE: The volume radiation of a gas-filled source behind a plane shield

PERIODICAL: Atomnaya energiya, v. 13, no. 1, 1962, 68

TEXT: The attenuation factor of the gamma radiation emitted by a cylindrical gas-filled source was calculated under the assumption that the self-absorption in the source could be neglected. The calculations were made using the formulas $P=2P_{\gamma}qRS(p, k, \mu_1 R, \mu_2 d)\,B(\mu_2 l)$ (1) for the dose rate in the source plane behind the shield, $K=\frac{S(p, k, \mu_1 R, \mu_2 d=0)}{S(p, k, \mu_1 R, \mu_2 d)\,B(\mu_2 l)}=\frac{K'(p, k, \mu_2 d)}{B(\mu_2 l)}$. (2) for the attenuation factor in the shield, and

$$K'(p, k, \mu_2 d)=Ae^{1.035\mu_2 d}+(1-A)e^{0.85\mu_2 d}. \quad (3)$$

as an approximate relation holding for the attenuation factor K' if multiple scattering in the shield is neglected. B is the build-up factor of the scattered radiation for a point source; μ_2 = ln K'. The remaining

Card 1/2

The volume radiation ...

definitions are given in "Atomnaya energiya", v. 8, no. 4, 374, 1961. The coefficient A, which depends only on source parameters, is tabulated. The accuracy of Eq.(3) is 10-15%. There is 1 table.

SUBMITTED: December 18, 1961

Card 2/2

LARICHEV, A.V.; OSANOV, D.P.; POPOV, V.I.

Spectral composition of γ-radiation from homogeneous cylindrical sources. Atom. energ. 13 no.2:145-151 Ag '62. (MIRA 15:8)
(Gamma rays—Spectra)

ACCESSION NR: AT4021251 S/2892/63/000/002/0051/0065

AUTHOR: Osanov, D. P.

TITLE: Experimental data on the shielding attenuation of γ radiation of extended sources

SOURCE: Voprosy* dozimetrii i zashchity* ot izlucheniy, no. 2, 1963, 51-65

TOPIC TAGS: γ radiation, energy scattering, radiation dose, point source, attenuation

ABSTRACT: This paper presents results of experiments on the investigation of shielding attenuation of γ radiation from solid, hollow, and gas filled cylindrical sources. The results are plotted in graphs. A number of measurements were made to determine the dependence of the multiple attenuation factor of γ rays on the location of the shield between the source and the detector. Based on experimental data, the author arrives at the following general conclusions. With an increase in the radius of the cylindrical source, the fraction of γ rays which penetrate the protective barrier in inclined directions increases, which leads to a stronger attenuation of radiation. An increase in the multiple factor of attenuation depends on the thickness and material of the shield. The physical parameters, the atomic

Card 1/2

ACCESSION NR: AT4021251

number and the density of the extended source, have an effect on the attenuation of γ radiation in the shield, since these parameters basically define the self-absorption and the self-scattering of radiation. The processes of scattering absorption of γ rays in the source itself are not related to the character of γ ray attenuation in the shield; the main factor which determines the attenuation of radiation in the shield is the spatial distribution of the active substance, i.e., the geometry of the source. When $\mu_0 x > 2$, the soft radiation formed due to the scattering in the source, amounts to an insignificant fraction of the total radiation beyond the shield. "I would like to express my gratitude to A. I. Bondar' and Yu. P. Kayurin for their aid in the execution of the experiments." Orig. art. has: 6 formulas, 12 figures, and 3 tables.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut (Moscow Physics and Engineering Institute)

SUBMITTED: 00 DATE ACQ: 06Apr64 ENCL: 00

SUB CODE: PH, NS NO REF SOV: 006 OTHER: 001

Card 2/2

OSANOV, D.P.

Effect of the shape of a shielding barrier on the attenuation of gamma rays from volume sources. Atom. energ. 15 no.4:331-332 O '63. (MIRA 16:10)

RADZIYEVSKIY, G.B.; OSANOV, D.P.

Depth dose distribution of absorbed energy from nonmonoenergetic electrons. Vop.doz. i zashch. ot izluch. no.3:125-138 '64. (MIRA 18:2)

OSANOV, D.P.; KOV[illegible], Ye.Ye. [illegible]YEVSKIY, G.B.

Tissue [illegible] of [illegible]ctron bremsstrahlung within the earth's [illegible] radiation belt. Vop.doz. i zashch. ot izluch. no.3:139-1[illegible].
(MIRA 18:[illegible])

L 6520-66 FSS-2/EWT(l)/EWT(m)/FS(v)-3/EEC(k)-2/FCC/EWA(d)/EWA(h) TT/DD/GW

ACC NR: AP5026058 SOURCE CODE: UR/0293/65/003/005/0782/0788

AUTHOR: Kovalev, Ye. Ye.; Osanov, D. P.; Radziyevskiy, G. B.; Mel'nik, A. D.

ORG: none

TITLE: Protection of the cosmonaut from electrons and bremsstrahlung radiation in the earth's radiation belt

SOURCE: Kosmicheskiye issledovaniya, v. 3, no. 5, 1965, 782-788

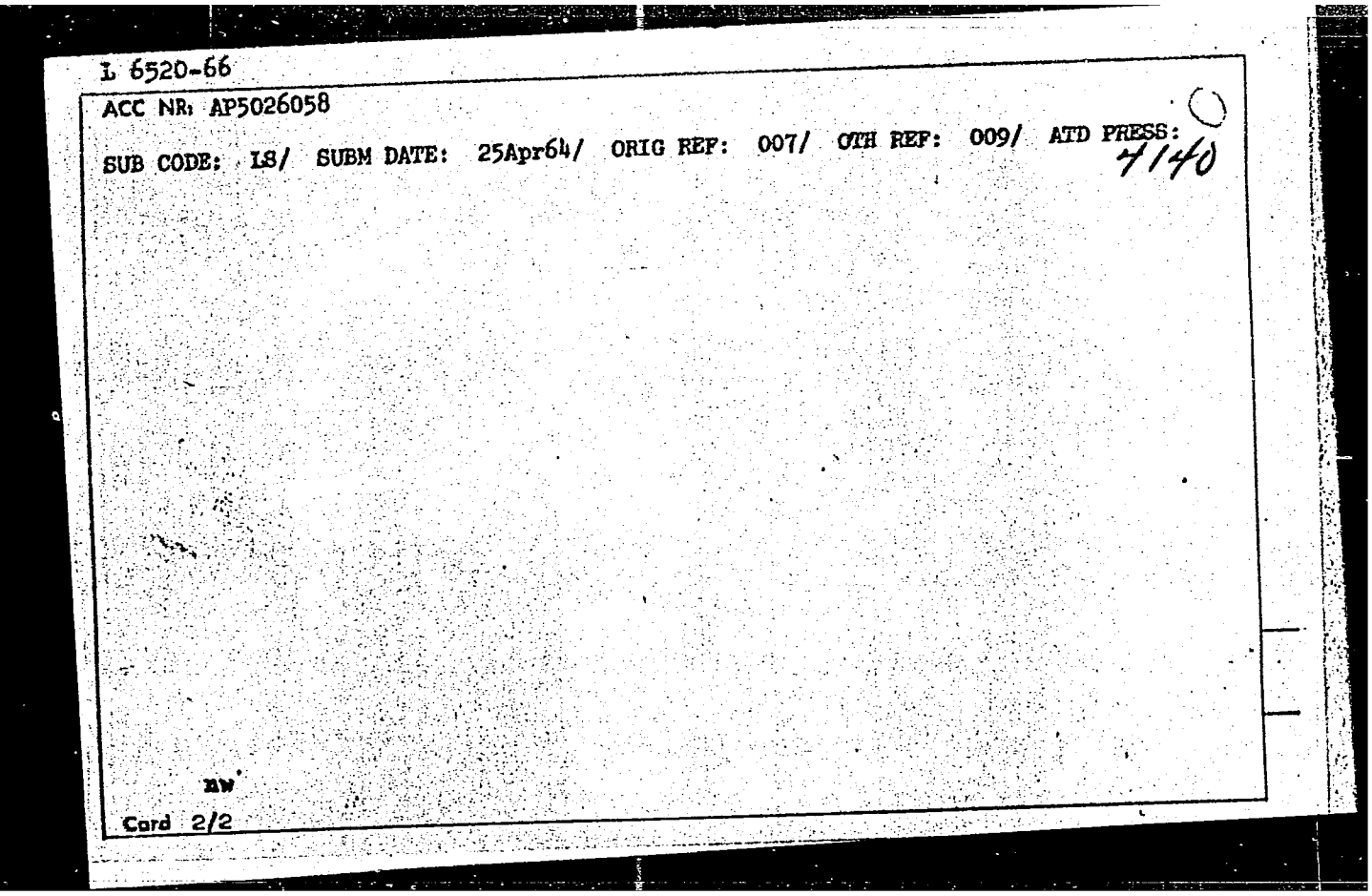
TOPIC TAGS: radiation protection, manned space flight, radiation biologic effect, electron, bremsstrahlung, absorbed dose, tissue dose, radiation dosimetry

ABSTRACT: The authors consider methodological problems in calculating the protection of cosmonauts from electron and bremsstrahlung irradiation in the earth's radiation belt. Among these problems is the selection of criteria for evaluating the radiation hazard and geometrical peculiarities of protective structures. A calculation is proposed for the protection of a cosmonaut situated outside a spacecraft in a radiation belt. Experimental data on the depth distribution of electron doses in materials of low atomic number are used in this calculation. The possibility of using a single dose distribution for electrons in an energy interval up to 3 Mev is demonstrated. Also presented are evaluations of bremsstrahlung tissue doses emittable by electrons in a protective layer. Orig. art. has: 4 figures. [CD]

Card 1/2

UDC: 628.58:629.198.621

0901 1723



L 6520-66
ACC NR: AP5026058
SUB CODE: LS/ SUBM DATE: 25Apr64/ ORIG REF: 007/ OTH REF: 009/ ATD PRESS: 4140
Card 2/2

L 56507-65 EWG(j)/EWT(m)/EWG(s)-2/EPF(n)-2/EWG(m)/EWP(j)/EWA(h)/EWA(l) Pc-4/ Peb/Pu-4/Pw-4 RM

ACCESSION NR: AP5016682 UR/0170/65/008/006/0807/0814

33
32
B

AUTHOR: Osanov, D. P.

TITLE: Temperature distribution in gamma shielding

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 8, no. 6, 1965, 807-814

TOPIC TAGS: concrete, concrete shielding, gamma radiation, gamma radiation shielding, gamma shielding, temperature distribution

ABSTRACT: A method is presented for calculating the temperature distribution in the shielding against gamma-radiation based on the solution of a steady-state heat-conduction equation with boundary conditions of the third kind. The temperature distribution is attained for plane isotropic and plane monodirectional radiation sources in concrete shieldings of various thicknesses. It was found that boundary conditions have a substantial effect on the distribution of temperature within the shielding. Scattering of gamma-rays inside the concrete shielding results in an increase of temperature. The γ-radiation beam geometry has a lesser effect on temperature distribution than the boundary conditions and the scattering. The increase in the thickness of the shielding worsens the heat removal from interior portions of the shielding block. The results obtained make it possible to evaluate

Card 1/2

L 56507-65

ACCESSION NR: AP5016682

the approximate safety conditions for concrete shielding and to estimate the heating which may develop in shieldings surrounding intense gamma-radiation sources. [BP]
Orig. art. has: 11 formulas and 3 figures.

ASSOCIATION: Institut biofiziki, Moscow (Biophysics Institute)

SUBMITTED: 20Apr64 ENCL: 00 SUB CODE: NP, PH

NO REF SOV: 008 OTHER: 004 ATD PRESS: 4035

Card 2/2

MIKHAYLOV, Lev Mikhaylovich; AREF'YEVA, Zinaida Semenovna; OSANOV, D.P., red.

[Tables and nomograms to calculate shielding from gamma rays; point sources] Tablitsy i nomogrammy dlia rascheta zashchity ot gamma-luchei; tochechnye istochniki. Moskva, Meditsina, 1965. 132 p. (MIRA 18:9)

L 29571-66 EWT(m)
ACC NR: AP6012876 SOURCE CODE: UR/0205/66/006/002/0298/0307

AUTHOR: Radziyevskiy, G. B.; Osanov, D. P.

ORG: none

TITLE: Distribution of absorbed energy in depth in materials made of light atoms and irradiated with accelerated electrons having energies of 0.4 — 1.2 Mev

SOURCE: Radiobiologiya, v. 6, no. 2, 1966, 298-307

TOPIC TAGS: electron beam, electron distribution, electron radiation, beryllium, aluminum, plexiglass, celluloid

ABSTRACT: In connection with problems of dosimetry of accelerated electrons, the authors determined the depth distributions of the absorbed energy in materials made of light atoms (e.g., aluminum, beryllium, plexiglass, celluloid) for the geometry of an "infinitely wide" electron beam. Measurements were made of the relative dose distributions in several materials with a normal incidence of the beam of electrons with energies in the 0.4 — 1.2 Mev range. The partially contradictory data given in the literature on

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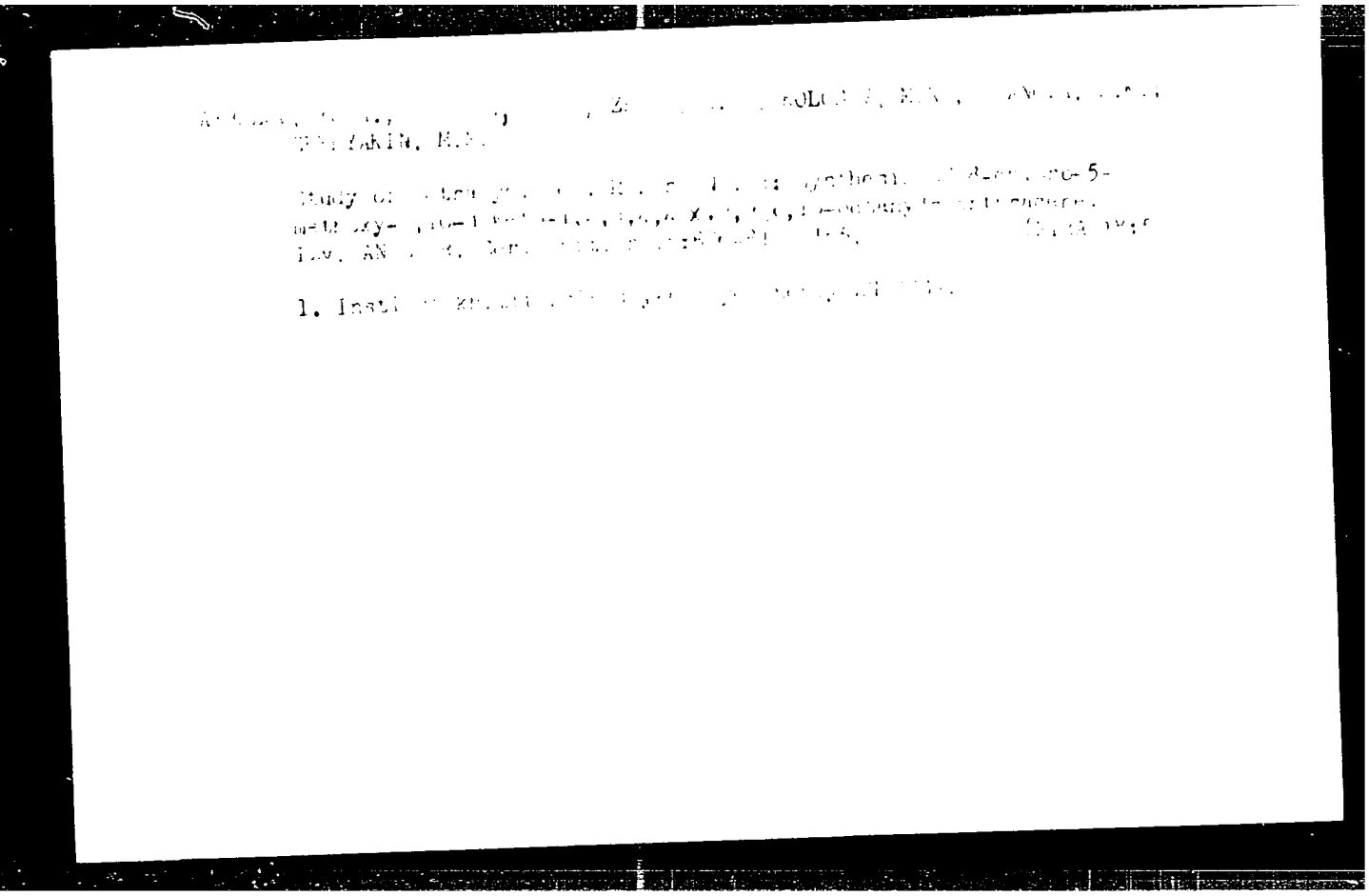
L 29571-66
ACC NR: AP6012876

dose distributions at normal incidence have been refined. For some materials measurements were made of the relative dose distributions at a beam angle of incidence in the zero to 60° range. The disappearance of the peaks on dose curves was detected on increasing the angle of incidence from zero to 60°, and an explanation is offered for this phenomenon. The question of setting up norms for relative dose distributions has been examined, i.e., the question of determining the absolute doses corresponding to the prescribed intensity of the electronic beam on the sample. The standards proposed require the knowledge of the dose or energy coefficients of the back scattering of electrons. Dose and energy coefficients have been determined for some light atom materials in the 0.4 — 1.0 Mev energy range. The authors express their gratitude to A. I. Fomichev, Z. F. Ponomareva, and A. D. Mel'nik who participated in taking the measurements, as well as to P. Ya. Glazunov and N. I. Vitushkin for providing the opportunity of working on the accelerator. Orig. art. has: 5 figures. [08]

SUB CODE: 20 / SUBM DATE: 15May64 / ORIG REF: 012 / OTH REF: 021/ ATD PRESS: 5014

Card 2/2



OSANOVA, L. R.

/The system $BeSO_4$–$MnSO_4$–H_2O (25°). O. I. Vorob'eva and L. R. Osanova. *Zhur. Obshchei Khim.* 23, 1988–9 (1953); cf. preceding abstr.—The soly. isotherms and d. were detd. for the system $BeSO_4$–$MnSO_4$–H_2O at 25°. Either $BeSO_4$ or $MnSO_4$ lowers the soly. of the other compd. There is no indication of the formation of double salts or solid solns. The solid phases are $BeSO_4 \cdot 4H_2O$, $MnSO_4 \cdot 5H_2O$, and the metastable $MnSO_4 \cdot 4H_2O$. J. R. L.

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001238

OSANOVA, M.A.

Photodecomposition of pentachloroethane. G. A. Razuvaev and N. A. Osanova. *J. Gen. Chem. U.S.S.R.* 24, 1731-4 (1954) (Engl. translation).—See *C.A.* 49, 3887 B.

(2)

PM

OSANOVA, N. A.

USSR/Chemistry - Photo-decomposition

Card 1/1 Pub. 151 - 13/37

Authors : Razuvayev, G. A., and Osanova, N. A.

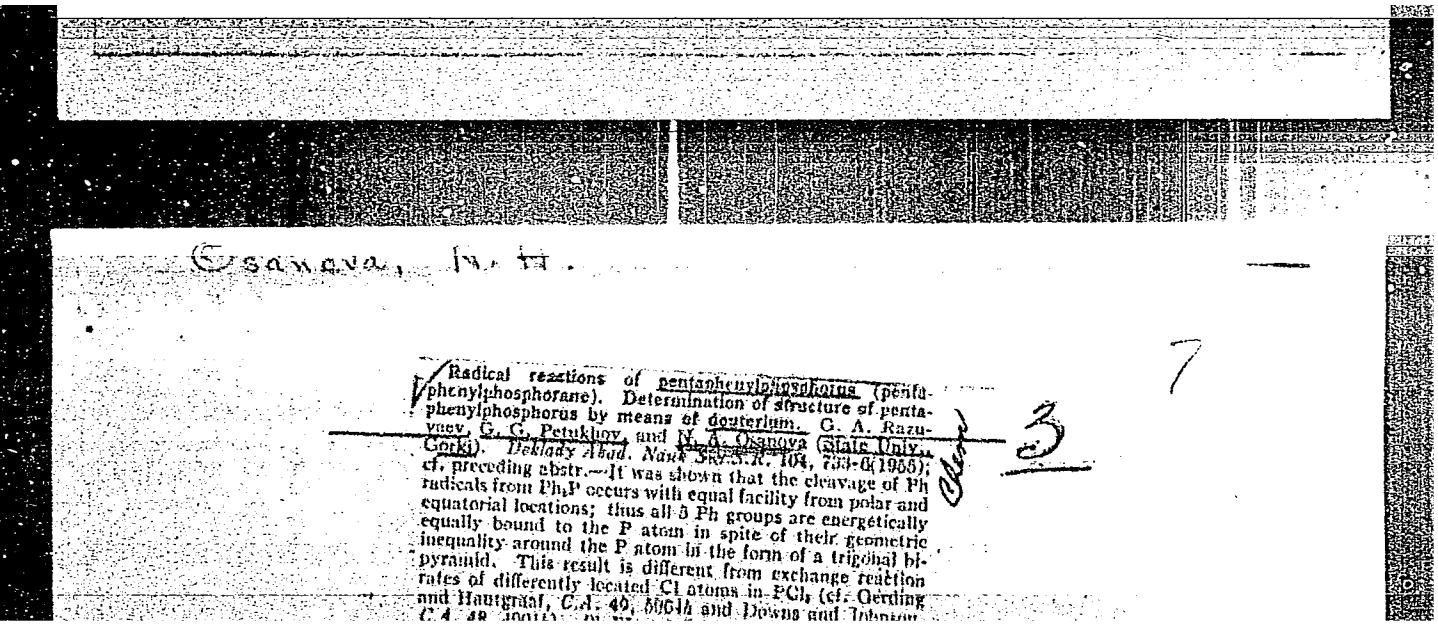
Title : Photo-decomposition of pentachloroethane

Periodical : Zhur. ob. khim. 24/10, 1771-1775, Oct 1954

Abstract : The results obtained by exposing pentachloroethane to the effects of ultraviolet ray radiation are described. The complete reaction scheme, beginning with the separation of the elementary Cl-atom from the pentachloroethane, and the formation of tetrachloroethyl-radicals, which are finally dimerized into octachlorobutane, is explained. The separated Cl chlorinates the basic pentachloroethane and the formed octachlorobutane up to the ion- and decachlorobutans. Eleven references: 7-USA; 2-USSR and 2-German (1940-1953).

Institution : State University, Gorkiy

Submitted : February 10, 1954



Osanova, N. A.

Radical reactions of pentaphenylphosphorus (pentaphenylphosphorane). Determination of structure of pentaphenylphosphorus by means of deuterium. G. A. Razuvaev, G. G. Petukhov, and N. A. Osanova (State Univ., Gorki). *Doklady Akad. Nauk S.S.S.R.* 104, 733-6(1955); cf. preceding abstr.—It was shown that the cleavage of Ph radicals from Ph_5P occurs with equal facility from polar and equatorial locations; thus all 5 Ph groups are energetically equally bound to the P atom in spite of their geometric inequality around the P atom in the form of a trigonal bipyramid. This result is different from exchange reaction rates of differently located Cl atoms in PCl_5 (cf. Oerding and Havinga, *C.A.* 49, 5004h and Downs and Tobolsky

RAZUVAYEV, G.A.; OSANOVA, N.A.

Pentaphosphenyl. Zhur.ob.khim. 26 no.9:2531-2537 S '56.
(MLRA 9:11)

1. Gor'kovskiy gosudarstvennyy universitet.
(Phosphenyl)

OSANOVA, N. A. Cand Chem Sci -- (diss) "Study of [illegible] Pentaphenylphosphorus." Gor'kiy, 1957. 7 pp 20 cm. (Gor'kiy State Univ im N. I. Lobachevskiy), 100 copies (KL, 26-57, 105)

5(3) SOV/79-29-9-38/76

AUTHORS: Razuvayev, G. A., Petukhov, G. G., Osanova, N. A.

TITLE: Investigation of the Reactions of Pentaaryl Phosphorus. Determination of the Equivalence of the Groups by Means of Deuterium

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 9, pp 2980-2983 (USSR)

ABSTRACT: The investigation of the reactions of pentaaryl phosphorus with deuterium in a phenyl group in benzene- or chloroform solution showed that the separation of both the polar and the equatorial phenyl groups takes place equally easily and with radical mechanism (Ref 1). The problem arose whether in ionic separation of pentaphenyl phosphorus the equivalence of the polar and equatorial phenyl groups was maintained. The reaction of pentaphenyl phosphorus with hydriodic acid (Ref 2) and acetic acid (Ref 1) is known to be an ionic reaction. The reactions of this phosphorus compound containing deuterium in a phenyl group with the above acids actually showed that the equivalence of the polar and equatorial groups is also observed in the course of an ionic reaction. The quantity of deuterium in dinitrobenzene obtained from the separated phenyl groups amounts to approximately 1/5 of the total quantity of deuterium in pentaphenyl phos-

Card 1/3

Investigation of the Reactions of Pentaaryl Phosphorus. Determination of the Equivalence of the Groups by Means of Deuterium

phorus as may be seen from the data of table 1 (experiments 1,2). J. Wittig substituted the p-tolyl group for a phenyl group and found in the reaction of tetraphenyl tolyl phosphorus with hydrobromic acid (Ref 2) that besides benzene and toluene a mixture of triphenyl-p-tolyl- and tetraphenyl phosphonium bromide results (3:1). Information on the ratio of benzene to toluene is, however, missing in his report as well as the method of determining the ratio of the salts in the reaction products. The authors assumed that such a ratio of the separated phenyl- to the tolyl groups with tagged atoms could be determined. For this purpose a tetraphenyl-p-tolyl phosphorus with a deuterium atom in the cycle of the tolyl group was synthesized and caused to react with hydrobromic acid, chloroform, and alcohol. The table (columns 5,9) gives data on the distribution of deuterium in products obtained from the separated radicals, and in the radicals which remained linked to the phosphorus, on the assumption of equivalent separation of the tolyl- and phenyl groups. A comparison of these data with those experimentally obtained (Table, experiment 3) shows that in ionic reactions (in

SOV/79-29-9-38/76

Investigation of the Reactions of Pentaaryl Phosphorus. Determination of the Equivalence of the Groups by Means of Deuterium

this case in the reaction with HBr (Table, experiment 3)) there is no difference in the rate of separation between the tolyl- and phenyl groups of tetraphenyl-p-tolyl phosphorus. In chloroform, where the reaction takes place according to the radical mechanism, separation of the phenyl radicals is predominant (Table, experiments 4,5). There are 1 table and 3 references, 1 of which is Soviet.

ASSOCIATION: Gor'kovskiy gosudarstvennyy universitet (Gor'kiy State University)

SUBMITTED: July 21, 1958

Card 3/3

RAZUVAYEV, G.A.; OSANOVA, N.A.; SHULAYEV, N.P.; TSIGIN, B.M.

Radical reactionsof pentaphenylantimony. Zhur.ob.khim. 30 no.10: 3234-3237 O '61. (MIRA 14:4)

1. Gor'kovskiy gosudarstvennyy universitet.
(Antimony organic compounds)

RAZUVAYEV, G.A.; PETUKHOV, G.G.; OSANOVA, N.A.

Investigating the reaction of pentaphenyl phosphorus with benzene by means of tagged atoms. Zhur.ob.khim. 31 no.7: 2350-2353 Jl '61. (MIRA 14:7)
(Phosphorus organic compounds) (Benzene)

NAUMOVA, Ye.K., dots.; SHAMSUTDINOV, N.S., assistent; FEDOROVA,S.A.: RYABOVA,N.I.; OSANOVA, V.P.; KOKSINA,K.D. (Kazan')

Fighting diphtheria in the country; abstract. Kaz.med.zhur. no.1:113 Ja-F'61 (MIRA 16:11)

[illegible], N.A. (Kazan'); [illegible], [illegible].N.; YAYMAN, Ye.I.; YAKOBSON, D.A.; [illegible]MINA, Ye.I.; FEL'[illegible]A, S.A.; [illegible]GUNOVA, V.P.; BLINOVA, L.L.; RIAZOVA, N.I.

Distribution of enter pathogenic Escherichia coli among various population groups in Kazan and some cities of the Tatar A. S. S. R. Zhur. mikrobiol., epid. i immun. 41 no.7:145-146 S '64. (MIRA 18:1)

1. Kazanskiy [illegible] meditsinskiy institut, mikrobiologii i virusologii i Tatarskaya respublikanskaya sanitarno-epidemiologicheskaya stantsiya [illegible] N.I.

OSANOVICH, M.I.

2102. **Conductimetric titration of certain salts with barium hydroxide. I. Titration of nickel sulphate.** M. I. Osanovich, Z. P. Yakusheva and S. V. Lelis-Sheva. *Zhur. Zap. Kazakh. Univ.*, 1954, 16, 21–26; *Ref. Zhur., Khim.*, 1955, Abstr. No. 23,081.—Conductimetric titration with $Ba(OH)_2$ solution can be used for the titration of solutions of $NiSO_4$, $NiSO_4$ and H_2SO_4, and $NiSO_4$ in the presence of Na_2SO_4 and of Na_2SO_4 and H_2SO_4, but the presence of KCl decreases the accuracy of the determination of $NiSO_4$, and Na_2SO_4 cannot be titrated in the presence of $NiSO_4$. G. S. SMITH

3

OSANUSHKOVA, O.I., medsestra (Moskva)

Respiratory disturbances in neurosurgical patients. Med.sestra 18 no.2:35-37 F '59. (MIRA 12:2)
(RESPIRATION)

ACCESSION NR: AP4029204 S/0226/64/000/002/0032/0039

AUTHOR: Boyko, P. A.; Gryaznov, B. A.; Dubinin, V. P.; Klimenko, V. N.; Kuz'menko, V. A.; Osasyuk, V. V.; Radomyssel'skiy, I. D.; Rudenko, V. N.

TITLE: Investigation of the properties of N32D4 high-alloy nickel-copper powder-metal steel

SOURCE: Poroshkovaya metallurgiya, no. 2, 1964, 32-39

TOPIC TAGS: N32D4 steel, high alloy steel, nickel copper steel, powder metal steel, copper containing alloy, nickel containing alloy

ABSTRACT: [illegible] properties manufactured by two technological variations. It was shown that the higher pressures of the first pressing and temperature of the first sintering raises the density of the manufactured samples only slightly and has little affect on the strength characteristics in static tests. These results are presented in tables and graphs. In dynamic tests (resiliency, ultimate strength) there is a considerable decrease in the strength of the samples manufactured by the second technological variation which is associated with an increased sensitivity of the dynamic strength characteristics of porosity micro-heterog[illegible]ion which is higher in the samples subjected to a first

ACCESSION NR: AP4029204

sintering at low temperature. Orig. art. has: 8 figures and 2 tables.

ASSOCIATION: Institut problem materialovedeniya AN SSSR (Institute of Material Behavior Problems, AN SSSR)

SUBMITTED: 13Sep63 DATE ACQ: 28Apr64 ENCL: 00

SUB CODE: ML NO REF SOV: 005 OTHER: 001

1 2/2

ACCESSION NR: AP4015269 S/0226/64/000/001/0077/0080

AUTHOR: Grigor'yeva, V. V.; Dubinin, V. P.; Sergeyenkova, V. M.; Osasyuk, V. V.

TITLE: Rupture strength of a hard chromium carbide alloy

SOURCE: Poroshkovaya metallurgiya, no. 1, 1964, 77-80

TOPIC TAGS: cermet, cermet rupture strength, chromium carbide alloy, chromium carbide nickel cermet, refractory alloy, refractory cermet, chromium carbide, alloy rupture strength

ABSTRACT: Cermet specimens (Fig. 1 of Enclosure) containing 85% chromium carbide and 15% nickel were compacted from powders and sintered in hydrogen at 1573K, then subjected to stress rupture tests at 1073 and 1173K for 100 hours. Results plotted graphically (Fig. 2 of Enclosure) are compared with data for the heat-resistant alloy EI437B and indicate a substantial difference in rupture strength of the two materials at 1073K, which decreases as the temperature is increased to 1173K. Orig. art. has: 3 figures and 1 table.

Card 1/4

ACCESSION NR: AP4015269

ASSOCIATION: Institut problem materialovedeniya AN UkrSSR (Institute for Problems in the Science of Materials AN UkrSSR)

SUBMITTED: 24Sep63 ENCL: 02

SUB CODE: MM NO REF SOV: 001 OTHER: 000

Card 2/4

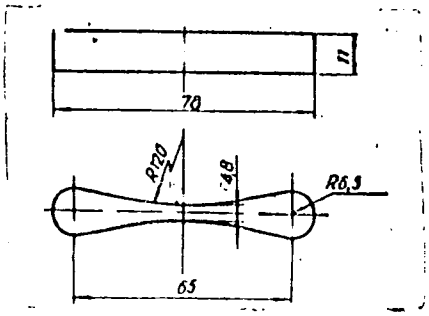


Figure 1. Specimen for stress rupture test.

ENCLOSURE: 02

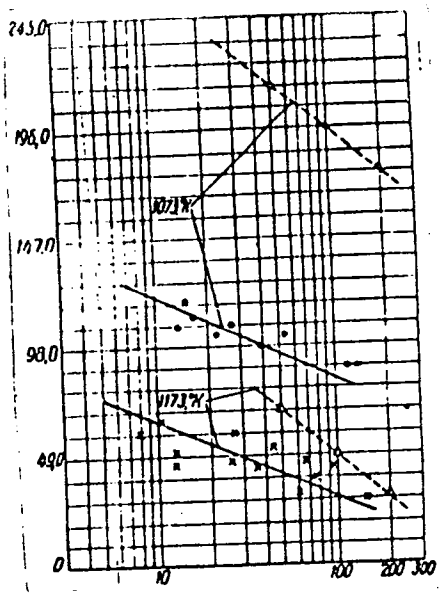
ACCESSION NR: AP4015269

Figure 2. Results of stress rupture tests.

_____chromium carbide alloy

----------heat resistant alloy EI437B

use "stress, mn/m^2" vertically and "time, hours" horizontally



4/4

OSASYUK, V.V., inzh.

New method for testing stress relaxation. Mashinostroenie no.5:
102 S-O '64 (MIRA 18:2)

OSAULENKO, B.

People of initiative and capability. Sov. profsoiuzy 18 no.11:8 Je '62.
(MIRA 15:6)

1. Predsedatel' oblastnogo komiteta profsoyuza rabotnikov gosudarstvennykh uchrezhdeniy, g. Vladimir.
(Vladimir Province--Trade unions)
(Vladimir Province--Officials and employees)

OSAULENKO, I.

Do not stop at achievements Mast. ugl. 3 no.12:18 D '54.
(MLRA 8:6)

1. Nachal'nik otdela truda i zarabotnoy platy tresta Ordzhonikidzeugol'.
(Coal mines and mining)

OSAULENKO, I., inzhener

Efficiency workers are utilizing all potentialities of industrial growth. Mast.ugl.4 no.9:15-16 S'55. (MLRA 9:1)
(Donets Basin--Coal mines and mining)

KOSHELEV, Konstantin Vasil'yevich; DOLZHENKO, Vladimir Ivanovich; OSAULENKO, Ivan Yemel'yanovich; YATSENKO, Vladimir Dmitriyevich; KHANIN, Aleksey Mikhaylovich; FEDOROVA. A.M., red.; KRASOVSKIY, I.P., red. izd-va; LOMILINA, L.N., tekhn. red.

[Timbering permanent workings of deep shafts] Kreplenie kapital'nykh vyrabotok glubokikh gorizontov shakht. Pod red. A.M. Fedorova. Moskva, Gosgortekhizdat, 1963. 75 p. (MIRA 16:7) (Mine timbering)

KOSHELEV, K.V., kand.tekhn.nauk; OS.ULENKO, I.Ye., inzh.; LOSEV, N.T., inzh.

Rock pressure in major workings of deep mines. Ugol' Ukr. 7 no.11:15-17 N '63. (MIRA 17:4)

1. Institut gornoy mekhaniki i tekhnicheskoy kibernetiki.

OSAULENKO, P L

AUTHOR: Osaulenko, P.L., Mining Engineer 127-58-5-7/30

TITLE: Improvement of Direct Cuts in the Mines of the Apatit Combine (Sovershenstvovaniye pryamykh vrubov na rudnikakh kombinata Apatit)

PERIODICAL: Gornyy Zhurnal, 1958, Nr 5, pp 26-28 (USSR)

ABSTRACT: Direct cuts are used in the apatite mine imeni Kirov for drifting horizontal and sinking vertical workings. Approximately 70% of the operations are carried out in rocks of 6 to 8 hardness coefficient, and 30% in rocks of 8 to 12 hardness coefficient - by Professor Protod'yakonov's scale. At present, several varieties of direct cut are used. The most efficient method is as follows: the cutting-shot-hole is drilled to a depth of over twice the depth of the other shot-holes of the set. It is charged over its full length and is blasted together with the other holes. The section remaining after the blast serves as a ready cut for the next set of shot-holes and is not charged anew. The diagram showing the distribution of shot-holes in this method is presented in Figure 3. This method of direct cut, with an advancing shot-hole also has some drawbacks, but work on its improvement is being continued in

Card 1/2

127-58-5-7/30

Improvement of Direct Cuts in the Mines of the Apatit Combine

the Apatit Combine, to achieve 4 to 5 m of face advancement during one cycle of blasting operations.
There are 4 figures.

ASSOCIATION: Nauchno-issledovatel'skaya laboratoriya kombinata Apatit
(Scientific Research Laboratory of the Apatit Combine)

AVAILABLE: Library of Congress

Card 2/2 1. Mines-Blast effects 2. Mines-Improvement 3. Mines-Development

OSAULENKO, P.L., gorny inzh.; ROZINOYER, B.L., gorny inzh.; PERMYAKOV, R.S., gorny inzh.

Breaking of ore in deep holes without corresponding free space.
Gor. zhur. no.4:9-11 Ap '60. (MIRA 14:6)

1. Kombinat Apatit, Kirovsk, Murmanskoy obl.
(Mining engineering)

OSAULENKO, P.L., gornyy inzh.; ROZINOYER, B.L., gornyy inzh.; ABAKUMOV, R.A., gornyy inzh.; PAPKOV, A.V., gornyy inzh.

Practice of charging upward holes in the Kirov apatite mine. Gor. zhur. no.3:63-64 Mr '63. (MIRA 16:4)

1. Nauchno-issledovatel'skaya laboratoriya kombinata "Apatit", g. Kirovsk.

OSAULENKO, P.L., gornyy inzh.; ROZINOYER, B.L., gornyy inzh.; SUKHODREV, V.M., gornyy inzh.

Practice of upward drilling of holes in the Kirov apatite mine. Gor. zhur. no.7:29-31 Jl '63. (MIRA 16:8)

1. Kombinat "Apatit".

LITVINOV, I.D., gornyy inzh. [deceased]; VLASOV, G.Yu., gornyy inzh.; OSAULENKO, P.L., gornyy inzh.; ROZINKYER, B.L., gornyy inzh.

Development of breaking methods in mines of the "Apatit" Combine. Gor. zhur. no.11:3-7 N '63. (MIRA 17:6)

1. Kombinat "Apatit."

KABAK, K.S. (Kiyev, Brest-Litovskoye shosse, d.82); KOLOMIYTSEV, A.K. (Kiyev, Brest-Litovskoye shosse, d.82); OSAULENKO, V.Ya. (Kiyev, Brest-Litovskoye shosse, d.82); CHERNOV, O.V. (Kiyev, Brest-Litovskoye shosse, d.82)

Reaction of the peripheral nerves of the skin to synthetic suture material. Nov. khir. arkh. no.5:92-95 S-O '60. (MIRA 14:12)

1. Kafedra gistologii i embriologii (zav. - zasluzhennyy deyatel' nauki, chlen-korrespondent AN SSSR prof. N.I.Zazybin) Kiyevskogo meditsinskogo instituta.

(SKIN--INNERVATION) (SUTURES)

OSAULENKO, V. Ya.

Effect of therapeutic doses of mercusal on the motor innervation of skeletal muscles. Vrach. delo no.2:90-94 F'64 (MIRA 17:4)

1. Kafedra gistologii i embriologii (zav. - zasluzhennyy deyatel' nauki chlen-korrespondent AMN SSSR prof. N.I.Zazybin) Kiyevskogo meditsinskogo instituta.

1. OSAULENKO, YE. I. RYUMIN, I. M. ENG.

2. USSR (600)

4. Plastering

7. Plastering work in below freezing weather. Biul. stroi. tekh. 9 no. 19, 1952.

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

OSAULKO, G.K.

Application of honey in ocular practice. Vest.oft. 32 no.3:35-36 My-Je '53. (MLRA 6:8)

1. Glaznoye otdeleniye Odesskoy oblastnoy klinicheskoy bol'nitsy.
(Honey--Therapeutic use) (Eye--Diseases)

OSBERG, I.

Meeting of the Moscow Society of Psychiatrists and Neuropathologists devoted to problems of controlling alcoholism. Zhur. nevr. i psikh. 54. no.12:1038-1039 D '54. (MLRA 8:2)
(ALCOHOLISM)

GALENKO, V.E.; OSHERG, I.Yu.; AZBUKINA, V.D.

Use of aminazine in psychiatric clinics. Sov. med. 20 no.1:29-35 Ja '56. (MLRA 9:5)

1. Iz Nauchno-issledovatel'skogo instituta psikhiatrii (dir. D.D. Fedotov, nauchnyy rukovoditel'-prof. V.A. Gilyarovskiy) Ministerstva zdravookhraneniya SSSR.

(MENTAL DISORDERS, ther.
chlorpromazine)
(CHLORPROMAZINE, ther. use
mental disord.)

GALENKO, V.Ye.,; OSBERG, I.Yu.,; AZBUKINA, V.D.

Aminazin v psikhiatricheskoi klinike. Zhur. nevr. i psikh. 56 no.2: 162-165 '56 (MLRA 9:5)

1. Institut psikhiatrii (dir. dotsent D.D. Fedotov) Ministerstva zdravookhraneniya SSSR.

(MENTAL DISORDERS, therapy,
chlorpromazine (Rus))
(CHLORPROMAZINE, therapeutic use,
ment. disord. (Rus))

OSBERG, I. Yu.

Clinical electrophysiological studies of psychiatric patients under aminazine treatment. V. E. Galenko, I. Yu. Osberg, I. S. Rabiner, and G. M. Frenkel (Inst. Psychiatry, Ministry Health U.S.S.R., Moscow). *Zhur. Nevropatol. i Psikhiatrii im. Korsakova* 56, 300-6(1956).—Tests were performed on 12 schizophrenics, 10 presenile psychotics, 1 manic depression psychotic, 1 with obstruction neurosis (fixed ideas), and 2 normal control individuals. A 6-lead brain oscillograph was used. The leads were attached in a uni- or bipolar manner to points of the following regions of the head: frontal, templar, parietal and occipital. Patients were then given aminazine injections intramuscularly (25-50 mg.). Encephalograms were made at 15-min. intervals for 1-2 hrs. Several days later the treatment and recording were reinstituted and continued through the course of the expt. aminazine therapy. For control purposes encephalograms were made prior to the initiation of the drug therapy. The encephalograms indicated a normalization of the elec. activity of the brain. In the course of treatment of schizophrenics with aminazine, elec. improvement and normalization of the elec. activity of the brain cortex ran parallel courses. A similarity was found between the immediate effects of aminazine on the elec. activity of the brain cortex of

was reduced from 10-11 to 8 and p...

OSBORIN, B.N.

2341. A SHORT TUNNEL KILN FOR THE FIRING OF FIRECLAY PRODUCTS. Ivanov, S.N. and Osborin, B.N. (Ogneupory (Fireproof Mat., Moscow), 1955, vol. 20, 305). After showing that a tunnel kiln does not have to be long (350-500 ft.), the authors give a detailed description of a 200 ft. kiln holding 20 car's. The kiln and tunnel dryer are in tandem and all the cars are moved by the same pusher.

B.Ceram.R.A.

Neurology

CZECHOSLOVAKIA

NADVORNIK, P.; OSCADAL, A.; CERNY, J.; Neurosurgical Clinic, Medical Faculty, Charles University (Neurochirurgicka Klinika Lek. Fak. KU), Hradec Kralove, Head (Prednosta) Prof Dr R. PETR; Neurological Department Okresni Institute of National Health (Neurologicke Odd. OUNZ), Havlickuv Brod, Head (Vedouci) Dr A. OSCADAL.

"Diencephaloschisis."

Prague, Ceskoslovenska Neurologie, Vol 29, No 5, Sep 66, pp 331 - 332

Abstract [Authors' English summary, modified] Diencephaloschisis is a rare anomaly of the brain; in the past it was known only from autopsies. The authors describe a live patient, in whom the disease was diagnosed by pneumoencephalographic examination. Its manifestations are similar to suprasellar expansion; this is different from the fissure of the hypothalamus. 1 Figure, 1 Western reference.

Abs Jour : Ref Zhur - Biologiya, No 2, 1959, No. 7416

Author : Oschmann, Hans
Inst : Not given

Title : Apiculture in the German Democratic Republic

Orig Pub : Pszczelarstvo, 1958, 9, No 2, 52-53

Abstract : No abstract given

C

CZECHOSLOVAKL./Far. .nimals. Honey Bee.

Abs Jour:Ref Zhur-Biol., No 20, 1958, 92661.

Author : Oschmann, H.
Inst : Institute of Veterinary Parasitology of Humboldt Univ.
Title : Development of Apiculture in the German Democratic Republic (GDR).

Orig Pub: Vcelarstvi, 1958, 11, No 1, 8-9.

Abstract: Apiculture in Germany has remained somewhat amateurish up to the very present. This is confirmed by the unusual variety in apiary inventory and equipment. The socialized sector covers only 1% of the apiaries. A single privately owned apiary has on an average 10 families (50000 apiary owners have 550000

Card : 1/2

OSCIK, Jaroslaw

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
General and Physical Chemistry

Surface tension and viscosity of binary mixtures of pyridine and quinoline with aliphatic alcohols. Andrzej Waksmundzki, Jaroslaw Ościk, and Anna Hrecka. Ann. Univ. Mariae Curie-Skłodowska, Lublin-Polonia, Sect. AA, 6, 73-85(1951)(English summary).—The relation between surface tension and viscosity was studied in systems (a) where a decrease of surface tension follows an increase of viscosity coeff., i.e. pyridine: EtOH, 2-propanol, 2-butanol, and 2-pentanol, (b) where a decrease of surface tension is at the same time accompanied by a decrease in coeff. of viscosity, i.e. pyridine: MeOH; quinoline: MeOH, EtOH, 2-propanol and 2-butanol, (c) where a decrease of surface tension is followed first by a decrease, then an increase, in viscosity coeff., i.e. quinoline: 2-pentanol. The relation for the studied systems was found to be $\sigma^{1/4} = (a\sigma/\eta) + b$, where a and b are consts., η = viscosity coeff. in centipoises, and σ = surface tension in dynes/cm. The consts. a and b for the systems studied were:

Alcohol	Pyridine a	Pyridine b	Quinoline a	Quinoline b
MeOH	$8.730 \times 10^{-[illegible]}$	−1.011	−2.[illegible] × 10[illegible]	2.[illegible]
EtOH	1.515×10^{-1}	1.810	−1.8[illegible] × 10[illegible]	1.0[illegible]
2-propanol	$1.060 \times 10^{-[illegible]}$	2.013	11.0[illegible] × 10[illegible]	0.7[illegible]
2-butanol	0.8709×10^{-1}	2.097	6.50 × 10[illegible]	1.7[illegible]
2-pentanol	0.8685×10^{-1}	2.105	6.2[illegible] × 10[illegible]	1.7[illegible]

L. J. Piotrowski

9-2-54

OSCIK, Jaroslaw

(3)

The chromatographic adsorption of some pyridine methyl derivatives from their aqueous solutions on active carbon. Andrzej Waksmundzki and Jaroslaw Oscik. *Ann. Univ. Mariae Curie-Sklodowska, Lublin-Polonia, Sect. AA*, 6, 87-107(1951)(English summary).—Adsorption of pyridine and some of its Me derivs. from aq. solns. was measured at 23° on active C (Carbopol 4ff) by use of a Tiselius-Claesson app. (type LKB 3003-10). Adsorbability increased with increase in mol. size, and so adsorbability for pyridine < 4-picoline < 3-picoline < 2-picoline < 2,6-lutidine < collidine; however, there were only small differences in the adsorptive power of the individual methylpyridine derivs.; their adsorption isotherms ran close to one another.

L. J. Piotrowski

11-5-54

OSCIK, JAROSLAW

(3)

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
General and Physical Chemistry

Effect of pH of the solution on the selective adsorption of pyridine and its methyl derivatives on active carbon. Andrzej Waksmundzki and Jaroslaw Oscik. *Ann. Univ. Mariae Curie-Sklodowska, Lublin-Polonia*, Sect. AA, 6, 109-28(1951)(English summary).—With increase in pH of the soln. adsorption increased slowly at first and then very rapidly until a pH was attained at which the base was half neutralized. Thus the pH for max. adsorption for pyridine was 5.4, for 2-picoline 6.0, for 2,6-lutidine 6.5, and for 2,4,6-collidine 7.4. L. J. Piotrowski

OSCIK, Jaroslaw

(2)

Conditions of chromatographic separation of pyridine and its methyl derivatives. I. Extent and selectivity of adsorption of some pyridine bases from aqueous solutions on various inorganic adsorbents. Jaroslaw Ościk. *Ann. Univ. Mariae Curie-Sklodowska, Lublin-Polonia, Sect. AA*, 6, 127–47(1951)(English summary).—By use of the Tiselius-Claesson's app. (type LKB 3003-10) the adsorption of pyridine bases from aq. solns. was studied by frontal analysis at 23° on siliceous earth, SiO_2 gel, Al silicate and Al_2O_3 (prepd. according to Brockman). The order of adsorbability was noted to be Al_2O_3 <, siliceous earth < Al silicate < SiO_2 gel < activated C. The adsorbability on Al silicate and SiO_2 gel was pyridine < 2-picoline < 3-picoline < 4-picoline < 2,6-lutidine < 2,4,6-collidine. By the elution method, it was found that a sufficient selectivity of adsorption of bases whose mols. differ by CH_2 was present to sep. them chromatographically on SiO_2 gel. L. J. P.

Oscik, J.

P 0

Chromatographic separation of pyridine and its methyl derivatives. II. Effect of polar solvents on magnitude and selectivity of adsorption of pyridine bases on active charcoal. III. Effect of apolar solvents on magnitude and selectivity of adsorption of pyridine bases on active charcoal. J. Oscik (*Ann. Univ. M. Curie-Sklodowska*, 1952, **7**, AA, 1—19, 21—[illegible]). Adsorption from solutions of pyridine bases falls in the solvent order H_2O > MeOH > EtOH > Pr^nOH > $COMe_2$; this order is associated with the polarity of the solvents (dielectric const. and dipole moment), and is ascribed to increasing solvation. The orders of magnitude of adsorption from solutions are: from H_2O, C_5H_5N < 4-methyl- < 3-methyl- < 2-methyl- < 2 : 6-dimethyl- < 2 : 4 : 6-trimethyl-pyridine; from alcohols, C_5H_5N < 3-methyl- < 4-methyl- < 2-methyl- < 2 : 4 : 6-trimethyl- < 2 : 6-dimethyl-pyridine; from $COMe_2$, 2 : 4 : 6-trimethyl- < C_5H_5N < 3-methyl- < 4-methyl- < 2-methyl- < 2 : 6-dimethyl-pyridine. Max. selectivity of adsorption from solutions of pairs of these bases varies according to the solvent and the solutes. Thus, C_5H_5N and picolines are best separated from EtOH solutions, picolines (methylpyridines) and 2 : 6-dimethylpyridine from Pr^nOH, and 2 : 4 : 6-trimethyl- and 2-methyl- or 2 : 6-dimethyl-pyridine from $COMe_2$.

III. Adsorption falls in the solvent order: light petroleum > ligroin > C_6H_6 ~ toluene ~ xylene. As for polar solvents, the magnitude of adsorption falls with increasing solvation of the solutes, and for all solvents rises in the order trimethyl- < dimethyl- < monomethyl-pyridine; C_5H_5N behaves anomalously, adsorption being greatest from ligroin, and least from toluene or C_6H_6. In general, selectivity of adsorption is greatest for solutions in light petroleum, from which chromatographic separation of picolines may be possible.

R. Truscor.

OSCIK, J.

"Using an interferometer in researches on adsorption and in chromatographic analysis" p. 35 (Wiadomosci chemiczne, Vol. 7, No. 1, Jan. 1953, Wroclaw)

SO: Monthly List of East European Accessions, Vol. 3, No. 3 Library of Congress, March 1954, Uncl.

OSCIK, Jaroslaw

7 5 2

Adsorption selectivity in adsorption chromatography. Jarosław Ościk and Andrzej Waksmundzki. *Ann. Univ. Mariae Curie-Skłodowska, Lublin-Polonia, Sect. AA* 9, 9-34(1954)(Pub. 1956)(English summary).—The adsorption tendency is characterized thermodynamically by the difference in standard chem. potentials of the adsorbed substance in the surface layer and in the bulk of the soln. The adsorption selectivity, in the case of 2 adsorbents *A* and *B*, is expressed by the difference between the changes in chem. potential for each of the adsorbents. Among the factors affecting the process, polarity of the adsorbent, solvent, and other solutes is considered. The polarity is detd. by 3 factors, the dipole moment, the dielec. const., and the polarizability. Of these only the dielec. const. of the constituents of the chromatographic system can be well correlated with the extent of adsorption. Four possible combinations in chromatographic systems are discussed: (*a*) polar solvent-polar adsorbent, (*b*) nonpolar solvent-polar adsorbent, (*c*) polar solvent-nonpolar adsorbent, (*d*) nonpolar solvent-nonpolar adsorbent. A quant. expression for the selectivity of adsorption is given and related to the Langmuir equation. Morris Eisenberg

Chem

Category: Poland/Analytical Chemistry - Analysis of organic substances. G-3

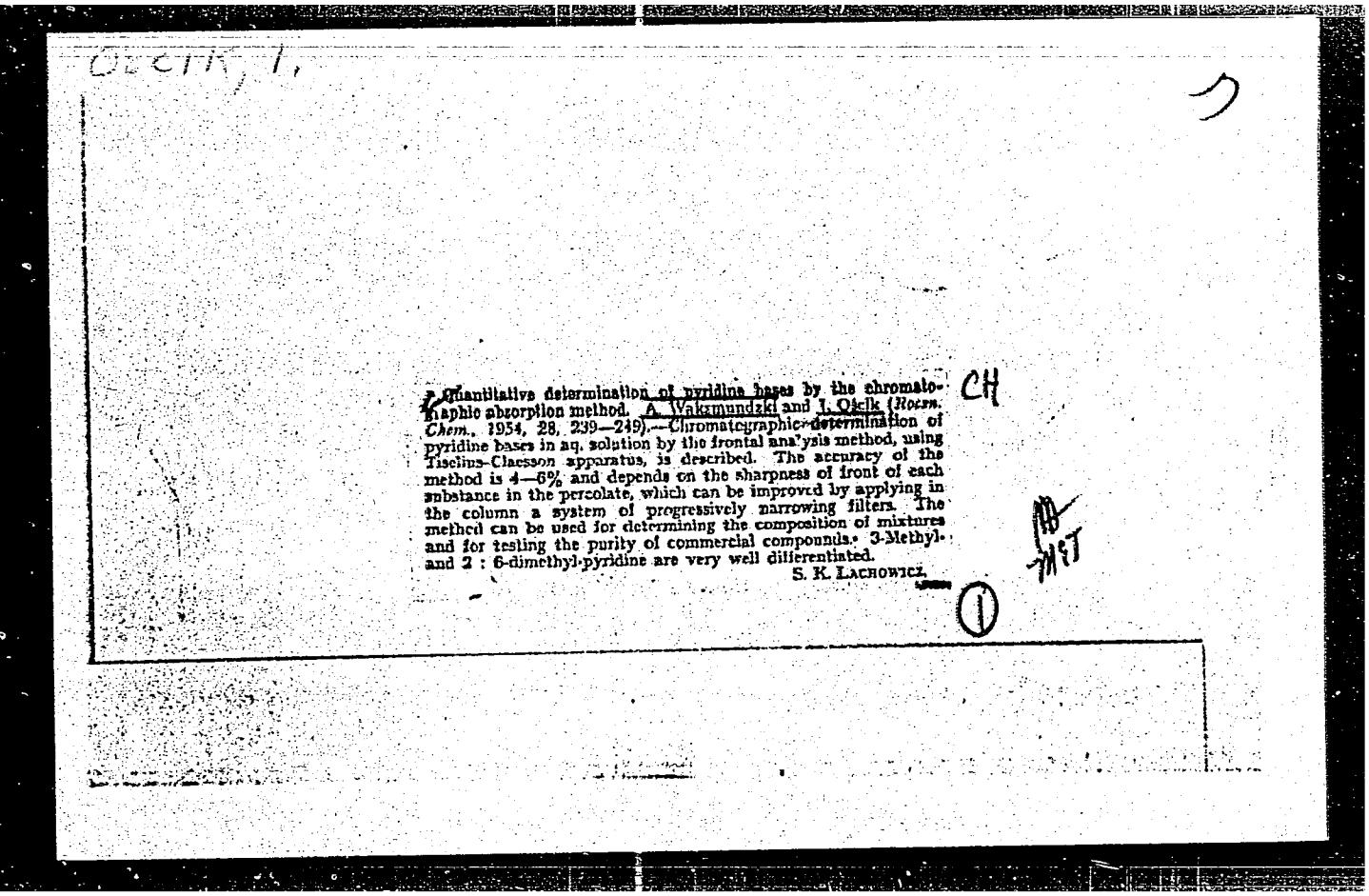
Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 31061

Author : Waksmundzki Andrzej, Oscik Jaroslaw, Frelek Zbigniew
Inst : M. Curie-Sklodowska University
Title : Paper Chromatography of Nitrotoluidines. I. Separation and Identification of Isomeric Mononitro-Derivatives of p-Toluidine.

Orig Pub: Ann. Univ. M. Curie-Sklodowska, 1954 (1956), AA9, No 1-9, 83-89

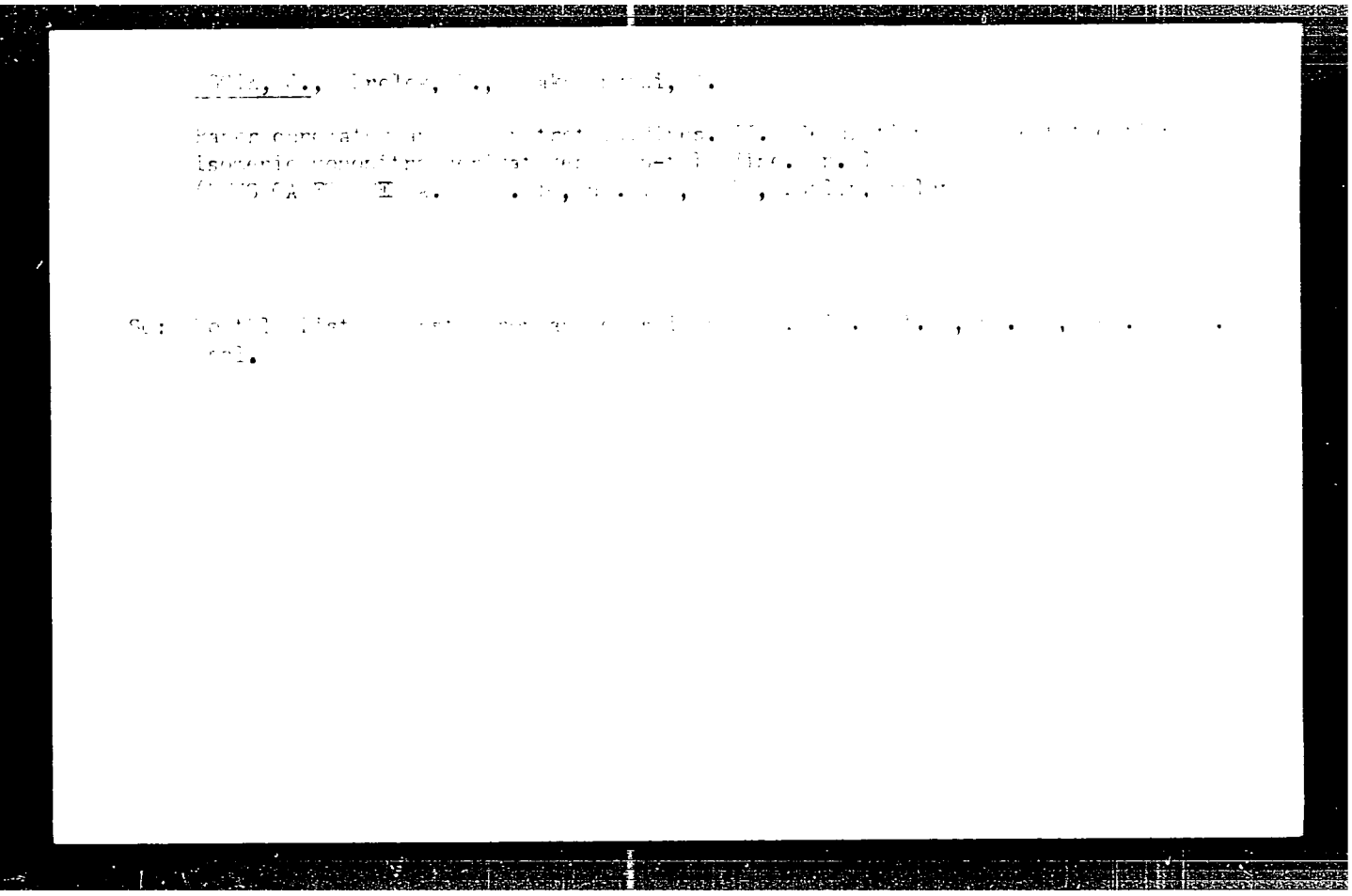
Abstract: On strips (23 x 8.5 cm) of No 3 Whatman paper are placed 5-10 γ of the substance under study, in the form of a 0.5% solution in C_6H_6, at a distance of 3.5 cm from the bottom edge. Chromatography is carried out using n-hexane as the solvent (duration of chromatography is of about 90 minutes). On using paper of usual moisture content long tails are formed. Best results are obtained with paper having a moisture coefficient (ratio of weight of moist and dry paper) of 1.48-1.51. R_f are obtained for 3-nitro-o-nitrotoluidine (0.90), 4-nitro-o-toluidine (0.46),

Card : 1/2 -7-



Quantitative determination of pyridine bases by the chromatographic absorption method. A. Wakmundzki and J. Oklk (*Roczn. Chem.*, 1954, 28, 239—249).—Chromatographic determination of pyridine bases in aq. solution by the frontal analysis method, using Tiselius-Claesson apparatus, is described. The accuracy of the method is 4—6% and depends on the sharpness of front of each substance in the percolate, which can be improved by applying in the column a system of progressively narrowing filters. The method can be used for determining the composition of mixtures and for testing the purity of commercial compounds. 3-Methyl- and 2 : 6-dimethyl-pyridine are very well differentiated.

S. K. Lachowicz.



Oscik, J.

Effect of the binary solvent composition on the adsorption affinity and surface concentration of the solute. Jarosław Ościk (Univ. Lublin, Poland). *Roczniki Chem.* 31, 821–6 (1957)(English summary).—The effect of change of the binary solvent (A,B) compn. on the adsorption affinity ($(\Delta\mu^\circ)_{AB}$) of the solute (I), i.e. the difference in normal chem. potentials of I on the surface and in the soln., is given by: $(\Delta\mu^\circ)_{AB} = [(u_s)_A - u_A]\Delta\mu_s^\circ + RT \ln [c_{AB}/((c_s)_A{}^{u_A}(c_s)_B{}^{u_B})]$, where u_A and $(u_s)_A$ are the vol. fractions of A in the soln. and the surface layer, u_B that of B in the soln., $(\Delta\mu^\circ)_s = (\mu_s^\circ)_A - (\mu_s^\circ)_B$, i.e. the difference between the chem. potentials of I on the surface of A and B, resp., c_{AB} is the equil. concn. of I (moles/l.) in soln., and $(c_s)_A$ and $(c_s)_B$ are those on the surface of pure A and B, resp. ($c_{AB} = c_A = c_B$). The effect of change of binary solvent compn. on the surface concn. of I is expressed as follows: $(c_s)_{AB} = [(c_s)_A/(c_s)_B]^{u_A}(c_s)_B \exp -[(u_s)_A - u_A]\Delta\mu_s^\circ/RT]$. Applications are discussed. A. Krzglewski

OSCIK, J.

Paper chromatography of nitrotoluidines. Andrzej Waksmundzki and Jarosław Ościk. *Chem. Anal.* (Warsaw) 4, 113–17(1959)(English summary).—Sepn. of isomeric nitrotoluidines (I) by paper chromatography is described. Whatman No. 3, paper wetted with H_2O and air-dried at room temp. was used. A 0.5% C_6H_6 soln. of I were put on the strip 3.5 cm. from one edge. Hexane satd. with H_2O was used as mobile phase. The chromatogram was run to 18 cm. (about 1.5 hr.). Red spots were found without developer. The term of coeff. of moisture (W_s), defined as the wet/dry wt. ratio of paper was introduced. The best sepn. was obtained when W_s = 1.48–1.51. R_f values were: 0.93, 0.90, 0.78, 0.61 for 4-nitro-*m*-toluidine, 3-nitro-*o*-toluidine, 3-nitro-*p*-toluidine, *o*-nitroaniline; 0.69, 0.50 for 6-nitro-*o*-toluidine and 2-nitro-*p*-toluidine (II); 0.46, 0.25 for 4-nitro-*o*-toluidine (III) and *m*-nitroaniline; 0.22, 0.16, 0.05, and 0.05 γ for 5-nitro-*m*-toluidine, 5-nitro-*o*-toluidine, 2-nitro-*m*-toluidine and *p*-nitroaniline. Good results were obtained in sepg. III (R_f 0.46) and II on paper wetted with 5% aq. HCOOH; the R_f were 0.27 for III and 0.10 for II. The effect of substitution position in the benzene ring on R_f of amines is discussed.

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